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SUBSTITUTE SPECIFICATION

BEARING DEVICE, HEAD SUPPORT DEVICE AND RECORDING/REPRODUCING DEVICE

FIELD OF THE INVENTION

5 The present invention relates to a bearing device, a head support device, and a recording/reproducing device, and more particularly, it relates to a bearing device, a head support device, and a recording/reproducing device using these devices, capable of reducing the rotational load of ball bearings during high-speed rotation as in a hard disk drive (HDD) actuator, preventing damage to the ball bearings and
10 noise due to uneven rotation, and further, realizing cost reduction.

BACKGROUND OF THE INVENTION

 An actuator used in a hard disk drive (HDD), for example, is disclosed in Japanese Patent No. 2539180. In Fig. 2 of the Japanese patent is shown an actuator
15 assembly in a HDD, wherein a magnetic disk is mounted on a spindle motor for rotating the disk. According to the actuator assembly, an arm having a magnetic head at the end thereof is rotated by an actuator using a voice coil motor (hereafter called VCM), and the position of the magnetic head is controlled on the magnetic head, enabling reading and writing of magnetic information, as is described in the
20 disclosure.

 Also, in Fig. 1 of the Japanese Patent No. 2539180 is shown a pivot bearing, wherein a pair of roller bearings are arranged apart from each other in an axial direction. Further, a pre-load is given between the bearings by using a coil spring, that is, a pre-loading means.

25 Also, disclosed in Japanese Patent Laid-Open Application H9-103045 is a